

Claims

- [c1] A process for laser-cutting a web material, comprising the steps of:
 - a) providing a web material having a surface, said surface having at least one shaped pattern of an article; and
 - b) directing a laser beam along the shaped pattern to cut the article from the web and produce a cut article having a surface substantially free of flashing.
- [c2] The process of claim 1, wherein the web material is in the form of a sheet.
- [c3] The process of claim 2, wherein the sheet material is a polymeric sheet.
- [c4] The process of claim 3, wherein the polymeric sheet comprises a polymer selected from the group consisting of polycarbonates, polyolefins, acrylics, vinyls, polyesters, and elastomers.
- [c5] The process of claim 3, wherein the polymeric sheet is an elastomeric sheet comprising an elastomeric polymer selected from the group consisting of styrene-butadiene copolymers, polychloroprene, ethylene-propylene copolymers, silicones, and polyurethanes.
- [c6] The process of claim 1, wherein the surface of the web material has multiple shaped patterns of articles.
- [c7] The process of claim 6, wherein shaped articles are in the form of O-rings.
- [c8] A process for laser-cutting a web material, comprising the steps of:
 - a) providing a web material having a surface, said surface having at least one shaped pattern of an article;
 - b) positioning the web material on a staging platform;
 - c) using a camera optical system to locate the shaped pattern on the web material; and
 - d) directing a laser beam along the shaped pattern to cut the article from the web and produce a cut article having a surface substantially free of flashing.
- [c9] The process of claim 8, wherein the web material is in the form of a sheet.
- [c10] The process of claim 9, wherein the sheet material is a polymeric sheet.

- [c11] The process of claim 10, wherein the polymeric sheet comprises a polymer selected from the group consisting of polycarbonates, polyolefins, acrylics, vinyls, polyesters, and elastomers.
- [c12] The process of claim 10, wherein the polymeric sheet is an elastomeric sheet comprising an elastomeric polymer selected from the group consisting of styrene-butadiene copolymers, polychloroprene, ethylene-propylene copolymers, silicones, and polyurethanes.
- [c13] The process of claim 8, wherein a gantry system is used to position the web material and direct the laser beam.
- [c14] The process of claim 8, wherein a X-Y positioning system is used to position the web material and direct the laser beam.
- [c15] The process of claim 8, wherein the camera optical system and laser beam are controlled by a computer.